1. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-19x^2 + 7x + 3 = 0$$

   A. $x_1 \in [-16.61, -16.43]$ and $x_2 \in [16.54, 17.56]$

   B. $x_1 \in [-0.28, -0.15]$ and $x_2 \in [0.44, 0.98]$

   C. $x_1 \in [-1.31, -0.42]$ and $x_2 \in [0.19, 0.48]$

   D. $x_1 \in [-12.62, -11.26]$ and $x_2 \in [4.67, 5.14]$

   E. There are no Real solutions.

---

2. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$10x^2 + 33x - 54 = 0$$

   A. $x_1 \in [-10, -8.4]$ and $x_2 \in [0.49, 1.1]$

   B. $x_1 \in [-5.4, -4.3]$ and $x_2 \in [1.13, 1.66]$

   C. $x_1 \in [-3.2, 0.2]$ and $x_2 \in [3.45, 4.34]$

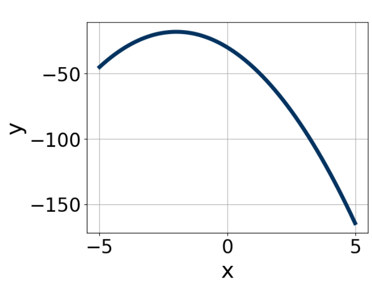
   D. $x_1 \in [-45.7, -43.9]$ and $x_2 \in [11.88, 12.65]$

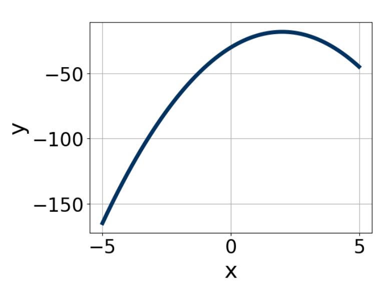
   E. $x_1 \in [-16.6, -11.8]$ and $x_2 \in [-0.14, 0.57]$

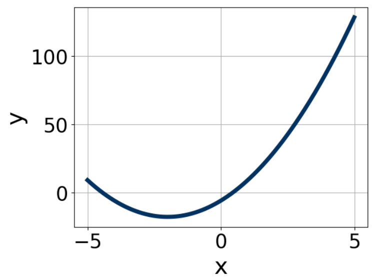
---

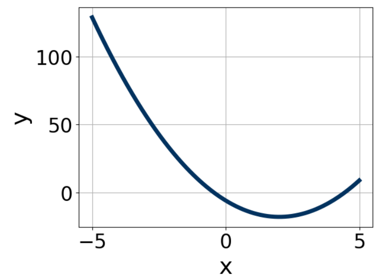
3. Graph the equation below.

$$f(x) = (x+2)^2 - 18$$

A. 

B. 

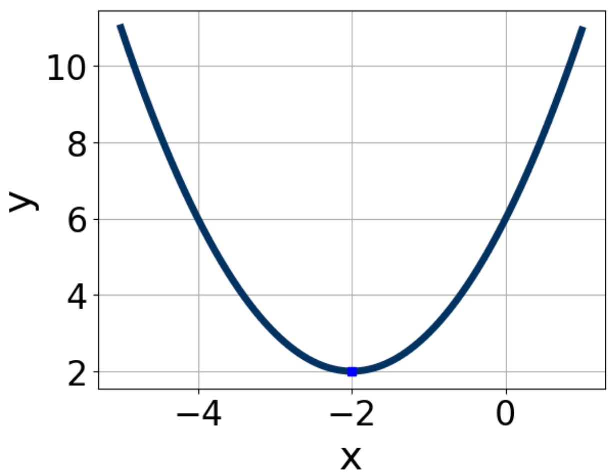
C. 

D. 

E. None of the above.

---

4. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that that a, b, and c belong to.



A. $a \in [-1.7, -0.3], \quad b \in [-5, -3]$, and $\quad c \in [-2, 0]$

B. $a \in [-1.7, -0.3], \quad b \in [-1, 7]$, and $\quad c \in [-2, 0]$

C. $a \in [-0.5, 1.6], \quad b \in [-5, -3]$, and $\quad c \in [0, 5]$

D. $a \in [-0.5, 1.6], \quad b \in [-5, -3]$, and $\quad c \in [6, 7]$

E. $a \in [-0.5, 1.6], \quad b \in [-1, 7]$, and $\quad c \in [6, 7]$

---

5. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$54x^2 - 33x - 10$$

A. $a \in [1.92, 2.94], \quad b \in [-5, 0], \quad c \in [24, 34], \text{ and } \quad d \in [-1, 3]$

B. $a \in [0.57, 1.03], \quad b \in [-49, -40], \quad c \in [0, 2], \text{ and } \quad d \in [9, 14]$

C. $a \in [11.87, 12.58], \quad b \in [-5, 0], \quad c \in [4, 5], \text{ and } \quad d \in [-1, 3]$

D. $a \in [5.38, 6.08], \quad b \in [-5, 0], \quad c \in [7, 14], \text{ and } \quad d \in [-1, 3]$

E. None of the above.

---

6. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 15x - 54 = 0$$

A. $x_1 \in [-45.96, -44.18]$ and $x_2 \in [29.57, 30.1]$

B. $x_1 \in [-2.29, -1.39]$ and $x_2 \in [1.14, 1.28]$

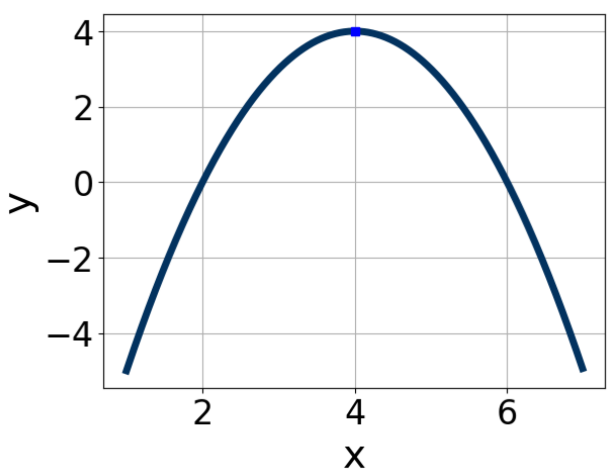
C. $x_1 \in [-3.98, -3.12]$ and $x_2 \in [0.57, 0.64]$

D. $x_1 \in [-9.7, -8.02]$ and $x_2 \in [0.05, 0.25]$

E. $x_1 \in [-1.35, 0.14]$ and $x_2 \in [3.43, 3.76]$

---

7. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-1, 0], \quad b \in [7, 12], \text{ and } \quad c \in [-14, -7]$

B. $a \in [-1, 0], \quad b \in [-8, -4], \text{ and } \quad c \in [-14, -7]$

C. $a \in [0, 5], \quad b \in [7, 12], \text{ and } \quad c \in [18, 22]$

D. $a \in [0, 5], \quad b \in [-8, -4], \text{ and } \quad c \in [18, 22]$

E. $a \in [-1, 0], \quad b \in [-8, -4], \text{ and } \quad c \in [-21, -17]$

---

8. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-18x^2 + 8x + 2 = 0$$

A. $x_1 \in [-0.3, 0]$ and $x_2 \in [0.47, 0.75]$

B. $x_1 \in [-0.9, -0.5]$ and $x_2 \in [-0.4, 0.4]$

C. $x_1 \in [-11.7, -10.7]$ and $x_2 \in [3.19, 3.82]$

D. $x_1 \in [-15.4, -13.3]$ and $x_2 \in [13.48, 14.68]$

E. There are no Real solutions.

---

9. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$16x^2 + 8x - 15$$

A. $a \in [1.04, 3.02], \quad b \in [-3, -1], \quad c \in [7.36, 8.39], \text{ and } \quad d \in [3, 8]$

B. $a \in [7.33, 9.11], \quad b \in [-3, -1], \quad c \in [1.17, 3.37], \text{ and } \quad d \in [3, 8]$

C. $a \in [-0.67, 1.7], \quad b \in [-15, -11], \quad c \in [0.58, 1.89], \text{ and } \quad d \in [20, 22]$

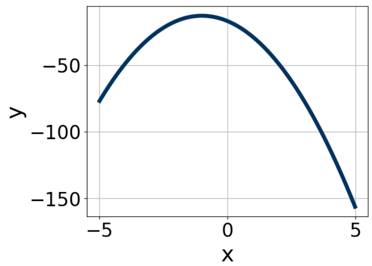
D. $a \in [2.63, 5.47], \quad b \in [-3, -1], \quad c \in [3.97, 5.28], \text{ and } \quad d \in [3, 8]$

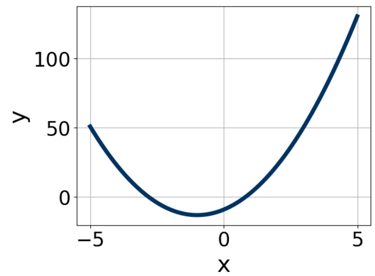
E. None of the above.

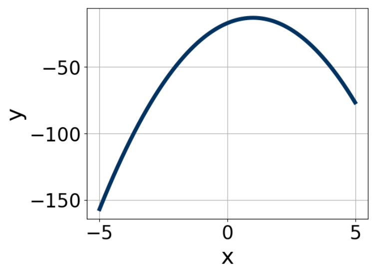
---

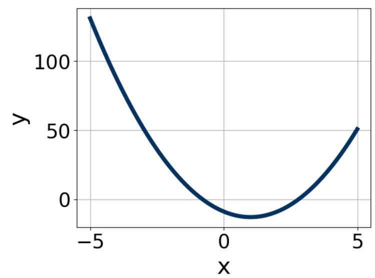
10. Graph the equation below.

$$f(x) = -(x + 1)^2 - 13$$

A. 

C. 

B. 

D. 

E. None of the above.

---

11. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$19x^2 - 15x + 2 = 0$$

A. $x_1 \in [2.86, 3.71]$ and $x_2 \in [11.49, 13.24]$

B. $x_1 \in [-1.4, -0.06]$ and $x_2 \in [-0.47, 0.17]$

C. $x_1 \in [-0.2, 0.26]$ and $x_2 \in [0.42, 0.63]$

D. $x_1 \in [-8.47, -7.98]$ and $x_2 \in [8.44, 9.67]$

E. There are no Real solutions.

---

12. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 10x - 24 = 0$$

A. $x_1 \in [-20.67, -19.77]$ and $x_2 \in [29.7, 30.12]$

B. $x_1 \in [-1.68, -1.44]$ and $x_2 \in [0.34, 0.8]$

C. $x_1 \in [-1.02, -0.6]$ and $x_2 \in [1.04, 1.54]$

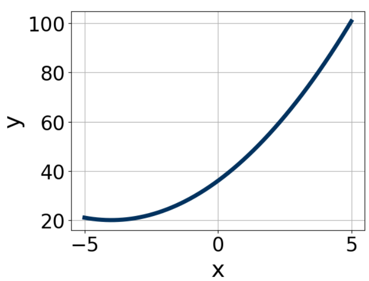
D. $x_1 \in [-4.46, -3.87]$ and $x_2 \in [0.15, 0.31]$

E. $x_1 \in [-0.54, 0]$ and $x_2 \in [2.39, 2.52]$

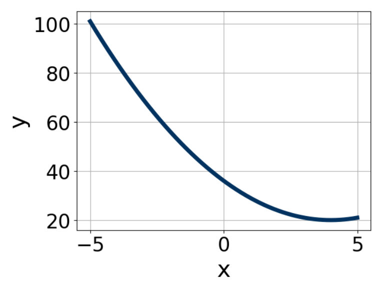
---

13. Graph the equation below.

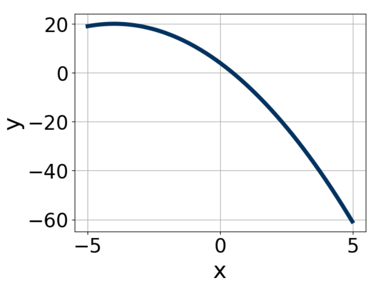
$$f(x) = -(x+4)^2 + 20$$



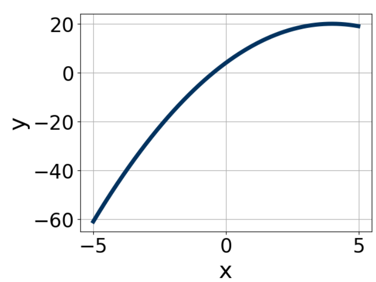
A.



C.



B.

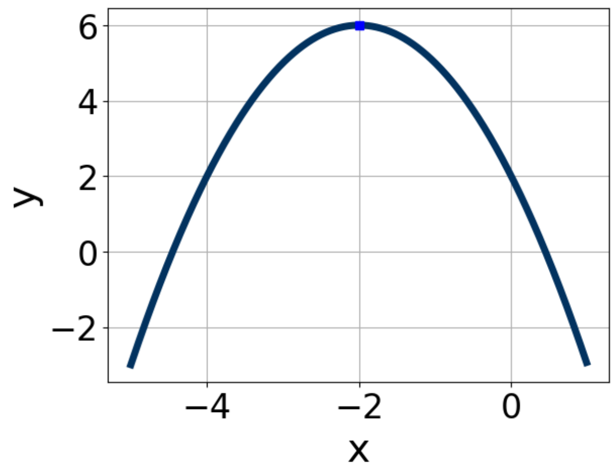


D.

E. None of the above.

---

14. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [0.4, 1.1], \quad b \in [3, 6], \text{ and } \quad c \in [8, 11]$

B. $a \in [-2.2, -0.7], \quad b \in [3, 6], \text{ and } \quad c \in [1, 3]$

C. $a \in [-2.2, -0.7], \quad b \in [3, 6], \text{ and } \quad c \in [-11, -7]$

D. $a \in [-2.2, -0.7], \quad b \in [-6, -2], \text{ and } \quad c \in [1, 3]$

E. $a \in [0.4, 1.1], \quad b \in [-6, -2], \text{ and } \quad c \in [8, 11]$

---

15. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$24x^2 + 2x - 15$$

A. $a \in [-1.4, 3.3], \quad b \in [-5, 2], \quad c \in [17.7, 19.4], \text{ and } \quad d \in [5, 7]$

B. $a \in [-1.4, 3.3], \quad b \in [-21, -16], \quad c \in [0.7, 1.8], \text{ and } \quad d \in [16, 26]$

C. $a \in [2.5, 5.6], \quad b \in [-5, 2], \quad c \in [3.7, 6.9], \text{ and } \quad d \in [5, 7]$

D. $a \in [6.2, 8.5], \quad b \in [-5, 2], \quad c \in [2.2, 3.4], \text{ and } \quad d \in [5, 7]$

E. None of the above.

---

16. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 60x + 36 = 0$$

A. $x_1 \in [-31.73, -29.14]$ and $x_2 \in [-30.24, -29.98]$

B. $x_1 \in [-1.73, -0.47]$ and $x_2 \in [-1.36, -1.08]$

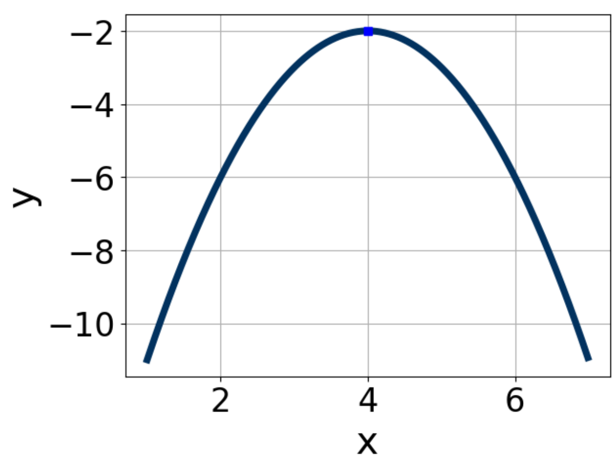
C. $x_1 \in [-7.85, -5.72]$ and $x_2 \in [-0.24, -0.19]$

D. $x_1 \in [-4.58, -3]$ and $x_2 \in [-0.56, -0.37]$

E. $x_1 \in [-3.3, -2.28]$ and $x_2 \in [-0.64, -0.54]$

---

17. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-1.6, -0.3], \quad b \in [-11, -7], \text{ and } \quad c \in [-16, -12]$

B. $a \in [-1.6, -0.3], \quad b \in [7, 10], \text{ and } \quad c \in [-18, -16]$

C. $a \in [-0.2, 1.4], \quad b \in [-11, -7], \text{ and } \quad c \in [13, 16]$

D. $a \in [-0.2, 1.4], \quad b \in [7, 10], \text{ and } \quad c \in [13, 16]$

E. $a \in [-1.6, -0.3], \quad b \in [-11, -7], \text{ and } \quad c \in [-18, -16]$

---

18. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$13x^2 + 10x - 4 = 0$$

A. $x_1 \in [-0.39, 0.11]$ and $x_2 \in [1.03, 1.41]$

B. $x_1 \in [-1.3, -0.98]$ and $x_2 \in [0.07, 0.31]$

C. $x_1 \in [-19.67, -16.86]$ and $x_2 \in [16.94, 17.17]$

D. $x_1 \in [-14.27, -13.31]$ and $x_2 \in [3.72, 3.78]$

E. There are no Real solutions.

---

19. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$24x^2 - 2x - 15$$

A. $a \in [8.8, 13], \quad b \in [-6, -3], \quad c \in [1.98, 3.21], \text{ and } \quad d \in [3, 11]$

B. $a \in [2.4, 4], \quad b \in [-6, -3], \quad c \in [7.53, 8.05], \text{ and } \quad d \in [3, 11]$

C. $a \in [4.1, 7.5], \quad b \in [-6, -3], \quad c \in [3.91, 4.62], \text{ and } \quad d \in [3, 11]$

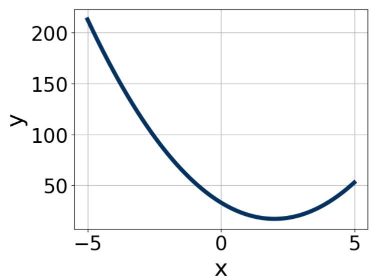
D. $a \in [-0.1, 2.2], \quad b \in [-24, -14], \quad c \in [0.85, 1], \text{ and } \quad d \in [15, 25]$

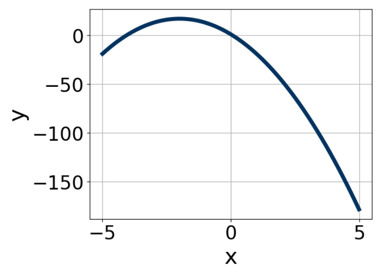
E. None of the above.

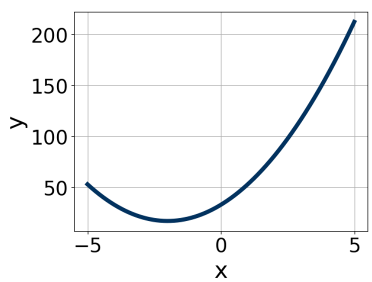
---

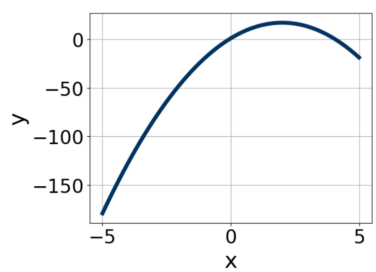
20. Graph the equation below.

$$f(x) = (x - 2)^2 + 17$$

A. 

C. 

B. 

D. 

E. None of the above.

---

21. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-10x^2 + 9x + 8 = 0$$

A. $x_1 \in [-20.5, -17.9]$ and $x_2 \in [20, 21.7]$

B. $x_1 \in [-2.6, -0.9]$ and $x_2 \in [-1.4, 1.1]$

C. $x_1 \in [-15.1, -13.1]$ and $x_2 \in [3.9, 7.3]$

D. $x_1 \in [-0.7, 0.3]$ and $x_2 \in [0.7, 2.3]$

E. There are no Real solutions.

---

22. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 - 38x + 24 = 0$$

A. $x_1 \in [1.18, 1.28]$ and $x_2 \in [1.19, 1.53]$

B. $x_1 \in [18, 18.02]$ and $x_2 \in [19.67, 20.4]$

C. $x_1 \in [0.32, 0.41]$ and $x_2 \in [3.97, 4.38]$

D. $x_1 \in [0.57, 0.61]$ and $x_2 \in [2.58, 2.84]$

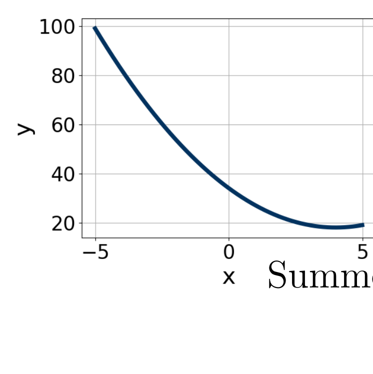
E. $x_1 \in [0.65, 0.75]$ and $x_2 \in [2.22, 2.5]$

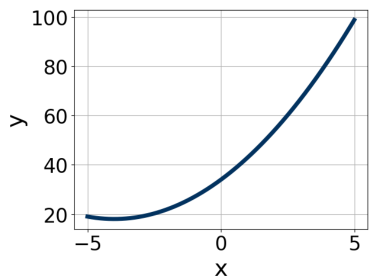
---

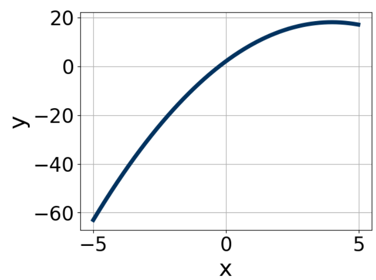
23. Graph the equation below.

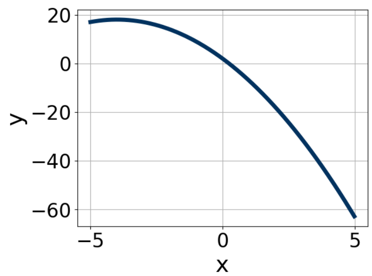
$$f(x) = -(x + 4)^2 + 18$$

A.



B. 

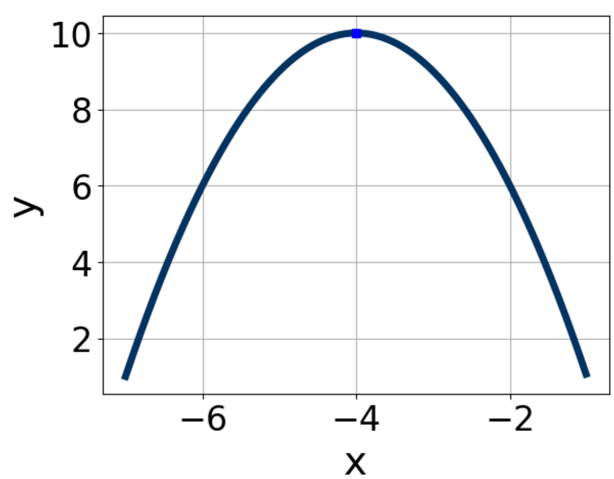
D. 

C. 

E. None of the above.

---

24. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-6, 0], \quad b \in [-9, -7], \text{ and } \quad c \in [-7, -3]$

B. $a \in [-6, 0], \quad b \in [6, 10], \text{ and } \quad c \in [-7, -3]$

C. $a \in [-6, 0], \quad b \in [6, 10], \text{ and } \quad c \in [-27, -24]$

D. $a \in [1, 6], \quad b \in [6, 10], \text{ and } \quad c \in [24, 28]$

E. $a \in [1, 6], \quad b \in [-9, -7], \text{ and } \quad c \in [24, 28]$

---

25. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$54x^2 - 15x - 25$$

A. $a \in [14.9, 21.4], \quad b \in [-10, -2], \quad c \in [1.8, 4.4], \text{ and } \quad d \in [5, 12]$

B. $a \in [1.2, 4.8], \quad b \in [-10, -2], \quad c \in [17, 19], \text{ and } \quad d \in [5, 12]$

C. $a \in [0.2, 1.7], \quad b \in [-46, -43], \quad c \in [0.4, 2.1], \text{ and } \quad d \in [28, 31]$

D. $a \in [4.5, 8.4], \quad b \in [-10, -2], \quad c \in [8.7, 9.5], \text{ and } \quad d \in [5, 12]$

E. None of the above.

---

26. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$20x^2 + 61x + 36 = 0$$

A. $x_1 \in [-5.75, -4.17]$ and $x_2 \in [-0.46, -0.4]$

B. $x_1 \in [-2.42, -2.3]$ and $x_2 \in [-0.77, -0.75]$

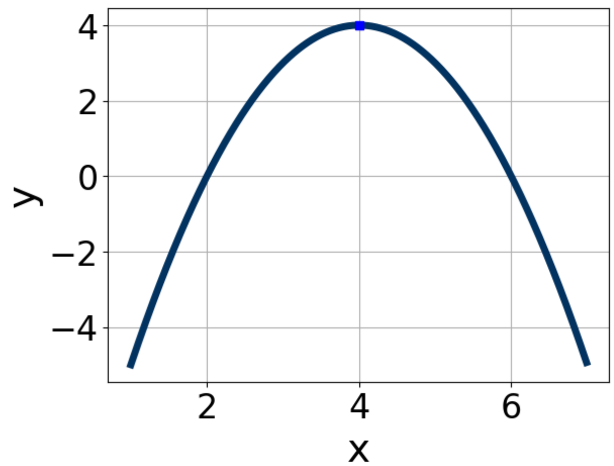
C. $x_1 \in [-45, -44.45]$ and $x_2 \in [-16.02, -15.93]$

D. $x_1 \in [-2.26, -1.94]$ and $x_2 \in [-0.86, -0.79]$

E. $x_1 \in [-9.46, -8.61]$ and $x_2 \in [-0.28, -0.13]$

---

27. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-3, 0], \quad b \in [-10, -7], \text{ and } \quad c \in [-21, -15]$

B. $a \in [0, 3], \quad b \in [-10, -7], \text{ and } \quad c \in [19, 21]$

C. $a \in [0, 3], \quad b \in [8, 12], \text{ and } \quad c \in [19, 21]$

D. $a \in [-3, 0], \quad b \in [8, 12], \text{ and } \quad c \in [-16, -11]$

E. $a \in [-3, 0], \quad b \in [-10, -7], \text{ and } \quad c \in [-16, -11]$

---

28. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$15x^2 + 11x - 9 = 0$$

A. $x_1 \in [-3.2, -0.5]$ and $x_2 \in [-0.45, 0.87]$

B. $x_1 \in [-27.7, -24.9]$ and $x_2 \in [25.18, 25.87]$

C. $x_1 \in [-0.9, 1.2]$ and $x_2 \in [0.66, 1.65]$

D. $x_1 \in [-19.3, -17.4]$ and $x_2 \in [7.04, 7.88]$

E. There are no Real solutions.

---

29. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$16x^2 + 8x - 15$$

A. $a \in [2.63, 4.72]$, $b \in [-10, 3]$, $c \in [3.77, 5.84]$, and $d \in [4, 8]$

B. $a \in [6.46, 9.19]$, $b \in [-10, 3]$, $c \in [1.12, 3.12]$, and $d \in [4, 8]$

C. $a \in [0.69, 1.04]$, $b \in [-18, -11]$, $c \in [0.84, 1.66]$, and $d \in [15, 22]$

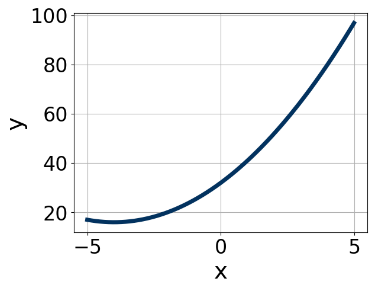
D. $a \in [1.68, 2.6]$, $b \in [-10, 3]$, $c \in [7.22, 8.16]$, and $d \in [4, 8]$

E. None of the above.

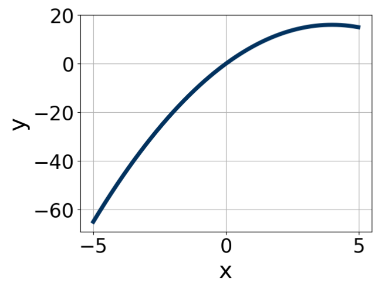
---

30. Graph the equation below.

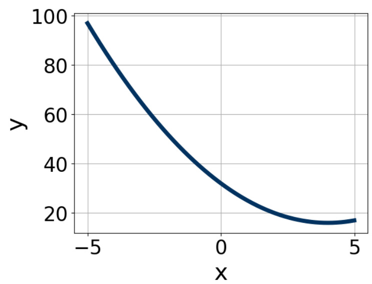
$$f(x) = (x - 4)^2 + 16$$



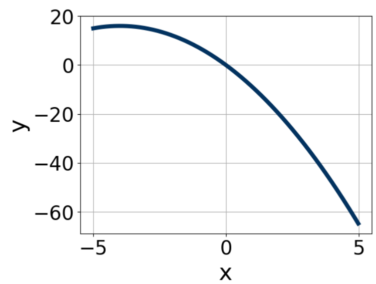
A.



C.



B.



D.

E. None of the above.
